

**a) Amendments to Claims**

As of this office action, claims 1-3, 5, and 22-24 are pending. In this response, claim 1 is canceled, new claim 25 is added, claims 2, 5, and 22-24 are amended.

1. (Canceled).

2. (Currently Amended) The process according to claim ~~1~~ 25 in which the enzyme is a mutant of P450<sub>cam</sub> or P450<sub>BM-3</sub>.

3. (Previously Presented) The process according to claim 2 in which the enzyme is one in which amino acid 47 and/or 51 of P450<sub>BM-3</sub>, or amino acid 96 of P450<sub>cam</sub>, have been changed to an amino acid with a less polar side-chain.

4. (Canceled).

5. (Currently Amended) The process according to claim ~~1~~ 25 in which the enzyme is (i) P450<sub>cam</sub> and comprises one or more of the following mutations: F87W, F87I, F87L, T185L, T185F, V247A, V247L or F87A-I395F; or (ii) P450<sub>BM-3</sub> and comprises the mutation R47L-Y51F.

6.-21. (Canceled).

22. (Currently Amended) The process according to claim ~~21~~ 25 in which the substrate is selected from the group consisting of limonene, ~~and~~ pinene<sub>1</sub>[[;]]and substituted derivatives thereof.

23. (Currently Amended) The process according to claim ~~1~~ 25 in which the substrate is a cyclic sesquiterpene, or a substituted derivative thereof.

24. (Currently Amended) The process according to claim 23 in which the substrate is selected from the group consisting of aromadendrene, carophyllene, longifolene, valencene, isobazzanene, silphinene, ishwarane, isopatchchoul-3-ene, ~~and~~ isosesquicarene,[[:]] and substituted derivatives thereof.

25. (New) A process for oxidising a substrate wherein said substrate is a limonene or pinene or a cyclic sesquiterpene, or a substituted derivative thereof, with the proviso that:

the substituent is not a halogen, and

the substituent does not comprise an oxygen atom,

and wherein the process comprises: oxidizing said substrate with a mutant haem-containing enzyme,

wherein when the substrate is a limonene or a pinene or substituted derivative thereof the enzyme is selected from the group consisting of :

- (a) a P450<sub>cam</sub> variant enzyme corresponding to SEQ ID NO:1, comprising a mutation at at least two or more of the following amino acid positions: 87, 96, 244, 247, or 248;
- (b) a P450 monooxygenase homologue variant enzyme with at least 95% sequence homology with SEQ ID NO:1 comprising at least two or more mutations at amino acid positions which are equivalent to amino acid positions 87, 96, 244, 247, or 248, of P450<sub>cam</sub> enzyme corresponding to SEQ ID NO:1;
- (c) a P450<sub>BM-3</sub> variant enzyme corresponding to SEQ ID NO:24, comprising a mutation at at least one or more of the following amino acid positions: 47, 51, or 87; and,
- (d) a P450 monooxygenase homologue variant enzyme with at least 95% sequence homology with SEQ ID NO:24 comprising at least one or more mutations at amino acid positions which are equivalent to

amino acid positions 47, 51, or 87 of P450<sub>BM-3</sub> enzyme corresponding to SEQ ID NO:24;

and wherein when the substrate is a cyclic sesquiterpene or substituted derivative thereof the enzyme is selected from the group consisting of :

- (e) a P450<sub>cam</sub> variant enzyme corresponding to SEQ ID NO:1 comprising a mutation of at least two or more of the following amino acid positions: 87, 96, or 244;
- (f) a P450 monooxygenase homologue variant enzyme with at least 95% sequence homology with SEQ ID NO:1 comprising at least two or more mutations at amino acid positions 87, 96, or 244;
- (g) a P450<sub>BM-3</sub> variant enzyme corresponding to SEQ ID NO:24, comprising a mutation at at least one or more of the following amino acid positions: 47, 51, or 87; and,
- (h) a P450 monooxygenase homologue variant enzyme with at least 95% sequence homology with SEQ ID NO:24 comprising at least one or more mutations at amino acid positions which are equivalent to amino acid positions 47, 51, or 87 of P450<sub>BM-3</sub> enzyme corresponding to SEQ ID NO:24;

wherein said mutations in (a), (b), (c), (d), (e), (f), (g), and (h) are a substitution of an amino acid by an amino acid with a less polar side chain.